UNITED NATIONS
ECONOMIC AND SOCIAL COUNCIL

Distr.
LIMITED
E/ECA/LDCs.5/4
12 March 1985
Original: ENGLISH

ECONOMIC COMMISSION FOR AFRICA

Fourth meeting of the Inter-governmental Committee of Experts of African Least Developed Countries

Arusha, United Republic of Tanzania

11-13 April, 1985

ECONOMIC COMMISSION FOR AFRICA

Fifth meeting of the Conference of Ministers of African Least Developed Countries

Arusha, United Republic of Tanzania

23-24 April, 1985

THE EXTENT OF INDUSTRIAL CAPACITY UNDER-UTILIZATION AND ITS IMPACT ON INDUSTRIAL DEVELOPMENT IN AFRICAN LEAST DEVELOPED COUNTRIES: ISSUES FOR CONSIDERATION*

* This study was prepared by an ECA Consultant. The views expressed does not necessarily reflect those of the United Nations Economic Commission for Africa (UNECA).

This document has been reproduced without formal editing.

Table of Contents

PART		Paragraphs	Page
I	INTRODUCTION	1-4	1-2
II	CONCEPTUAL ISSUES IN INDUSTRIAL CAPACITY UNDER UTILIZATION	5-9	2-3
III	THE CURRENT STATUS AND STRUCTURE OF INDUSTRIAL DEVELOPMENT OF AFRICAN LDCs.	10-19	3-5
IV	SOME EVIDENCES OF INDUSTRIAL CAPACITY UNDER UTILIZATION AND ITS IMPACT ON INDUSTRIAL DEVELOPMENT	20-32	7-10
	V.1 Causes of Capacity Underutilization	20-28	7-9
	V.2 The Impact of Industrial Capacity Under-Utilization on Industrial Development	29-32	9-10
VI	STRATEGIES TO COPE WITH INDUSTRIAL CAPACITY UNDER UTILIZATION	33-53	10-18
	VI.1 Short-term Measures at the National Level	34-39	11-12
	VI.2 Medium-term Measures	40-47	13-14
	V.2.1 At the National Level	40-45	13-14
	V.2.2 At the Sub-regional and regional levels	46-47	14
	VI.3 Long-Term Measures	48-53	14-16
	VI.3.1 At the National Level	48	14-15
	VI.3.2 At the Sub-regional and regional levels	49-53	15-16
	VI.4 The Implementation of the Industrial Development Decade for Africa (IDDA)	54-57	16-17
VII	CONCLUSIONS	58-60	17-18

List of Tables

Annex

I Population, per capita GDP and Growth Rates, GDP in manufacturing in African LDCs, 1980-82

II Proportion of Manufactured Goods in Export and Imports of African LDCs, 1970-1981.

III Labour Productivity in Some African LDCs (Modern Manufacturing Sector) (Gross Value Added at 1970 Constant Factor Cost Per Man Year).

IV Capacity Utilization of Industrial Enterprises in Guinea, 1976-1978.

V(a) Installed Capacity Utilization in Principal Industrial Activities in Burundi in 1979-1980.

V(b) Proportion of Imported Content of Industrial Inputs in Burundi in 1981.

VI Installed Capacity Utilization in Parastatal Manufacturing Enterprises in United Republic of Tanzania, 1979 and 1980.

VII Main Access to the Sea for land locked African LDCs.

I. INTRODUCTION

1. Based upon the recommendation of the third meeting of the Conference of Ministers of African LDCs, the secretariat carried out this study on the extent of industrial capacity under-utilization and its impact on industrial development in African least developed countries in order to create awareness of the problems and to make appropriate recommendations compatible with domestic policies for industrial development.

2. The critical and major role the industrial sector has to play in the structural transformation of the LDCs to achieve self-sustaining growth of the economy has been re-emphasized in the Substantial New Programme of Action (SNPA). In view of the low share of the manufacturing sector in GDP, the objective of the SNPA in this sector is to increase the growth of output to an overall annual rate of 9 per cent or more. As part of the objective of greater economic diversification and rapid economic growth, the SNPA recomends that the LDCs should undertake more appropriate programmes of industrial development, and in particular should: develop agro-based and agro-support industries and on-the-spot processing as appropriate; build up medium and light industries to meet the growing needs of their population for essential consumer goods; encourage and improve productivity in small scale and cottage industries, utilizing, where appropriate, non-governmental organizations through the introduction of appropriate technology and the supply of credit and materials and marketing arrangements; encourage the establishment of basic industries with indigenous resources, where feasible. 1/

3. The objective of the study is to establish evidences of the industrial capacity under-utilization in the African LDCs, identify as much as possible the causes and nature of excess capacity and its impact on industrial development, and make recommendations on the strategies to cope with the problem. The coverage of the study was initially planned to include visits to the various countries where enquiries were to be carried out in a selected number of enterprises in the different industrial groups. Time and manpower constraints, however, precluded such visits but questionnaires covering the relevant issues on industrial capacity under-utilization were sent to all the 26 countries. Replies were not received from any of them before the completion of this paper and consequently, reliance was placed entirely on documented evidences from various sources. Statistics on capacity measurements and/or estimation of the degree of its utilization are not usually incorporated in the national statistical sources. The information available from the various fragmentary sources on a few countries are inconsistent and unsystematic, and this imposed a serious limitation to the scope of the study.

1/ See the "Report of the United Nations Conference on the least developed countries", Paris, 1-14 September, 1981, U.N. Para. 49.

4. As a background to this paper, the conceptual issues in studying industrial capacity under-utilization are examined in Part II. Part III discusses the current status of industrial development in African LDCs and some evidences of the existence of Excess manufacturing capacity is presented in Part IV. The causes and impact of industrial capacity under-utilization on industrial development are analysed in Part V. Part VI proposes strategies to cope with the problem which include short-term, medium-term and long-term measures at the national, sub-regional and regional levels, and the need for African LDCs to implement the programme for the Industrial Development Decade for Africa IDDA).

II. CONCEPTUAL ISSUES IN INDUSTRIAL CAPACITY UNDER-UTILIZATION

5. Studies on industrial capacity utilization may prove elusive if care is not taken to come to grips with some conceptual and methodological issues associated with it which may impose a limitation to the utility of the data. It is necessary to distinguish two concepts: capacity utilization and capital utilization. Though they are related, the implications on policy and investment decisions may be different. While capacity utilization refers to the output produced within the constraints of available stock of plant and equipment, capital utilization is addressed to how much of the time the productive capital stock of a firm, sector or the economy are operated and how much time they are idle. 2/ To the extent that capacity utilization is a subset of capital utilization, it appears that the African LDCs ought to address themselves to the problems of the later rather than restricting themselves to only an aspect of it.

6. The variation in the understanding and treatment of problems of industrial capacity suggests an inter-disciplinary approach. From the engineering stand point, capacity utilization denotes the maximum output produced per unit of time with a given fixed stock of capital facilities, assuming an uninterrupted flow of variable inputs like labour and materials and without actual breakdown of operations. The economist takes the cost element in production into consideration and defines capacity utilization as the maximum possible output in a given time at the minimum average cost per unit of output. It follows that the capacity utilization of an enterprise from the point of view of the economist depends not on only the stock of plants and equipment, but also on the market conditions which includes wage rate, price fluctuations (of inputs and outputs), among others. In other words, capacity utilization is the rate of output which under given conditions provides the maximum profit for the enterprise. This capacity is usually referred to as rated capacity, effective capacity or preferred capacity. It is necessary to note that in changing market conditions, the rate of economic capacity can fluctuate without any physical changes in real capital assets.

2/ See "The utilization of capital in developing countries: A survey of empirical estimates", UNIDO/15-469 - 22 May 1984. Also refer to "Ways and means for fuller utilization of excess capacity in engineering industries" ID/WG.29/4 and "Excess industrial capacity in India and the possibility of its utilization for export purposes" ID/WG.29/5 presented at the Expert Group Meeting on Utilization of Excess Capacity for Export, Rio de Janeiro, Brazil, 3-12 March 1969.

7. The variations in the concept and definition of capacity measurements create interpretational problems in the utilization of data on capacity, especially for aggregation and comparison. Plant utilization from the view point of the individual enterprise vary widely from that of the industry and the economy as a whole. It follows therefore that the treatment and discussion of the problem should be done along the various levels. In measuring capacity utilization, the following factors have to be taken into consideration:

(i) distinction between theoretical and practical capacity;
(ii) normal work stoppages for repairs, maintenance, fittings and refittings of equipment for production of specific items;
(iii) normal speed of operations or intensity of production process;
(iv) the number of shifts normally employed or feasible;
(v) normal working days during a given period (week, month or year);
(vi) other peculiar standards or unique situations which are specific or vary among enterprises or industries within the same country or between countries.

8. Measurement of capacity utilization takes two approaches:

(a) comparison of the installed capacity, however measured, with actual output. This is expressed in percentage as the rate of capacity utilization. The difference from 100 is the capacity underutilization;

(b) measurement of the time of effective use of equipment regardless of the volume of output. The number of shifts is taken as the normal duration of time of production which determines the degree of capacity utilization. This second approach runs into a problem in situations where one shift is dominant as in most LDCs because there will be a false impression of the non-existence of excess capacity.

9. Since one of the intentions of this paper is to provide a framework for future research at the national and regional levels, studies on industrial capacity utilization in African LDCs should focus on actual current output in relation to the historical trends in production and the rated capacity of Plants and equipment. Questions about the potentials for multi-shift work should be explored fully as this will capture issues relating to full utilization of the potentials of the installed capital stock. By this approach the relevant aspects of the economic and engineering considerations would have been incorporated.

III. THE CURRENT STATUS AND STRUCTURE OF INDUSTRIAL DEVELOPMENT OF AFRICAN LDCs

10. The manufacturing sector in African LDCs is still at a very low level in terms of structure, level of output and productivity. The share of manufacturing in the GDP is estimated at an average of 7 per cent in 1982. For eleven of the countries, it is 5 per cent or less. Only four countries attained or exceeded 10 per cent of manufacturing value added in their GDP, they include Ethiopia-10 per cent, Malawi 10 per cent, Burkina Faso 11 per cent and Rwanda-14 per cent.

A significant feature of manufacturing in African LDCs is the concentration on agrobased activities which is characteristic of all the LDCs. UNIDO estimates the distribution of industrial categories in LDCs as follows: food processing 24 per cent, textiles 32 per cent, wood products 6 per cent, chemicals 9 per cent, non ferrous metallic minerals 4 per cent and engineering based industries 6 per cent. The share of agro-based industries is three times as high in the LDCs as in other developing countires. On the other hand the share of the other industries is much less, for example, in engineering products only one-tenth that of developing countries as a whole. 3/

11. The manufacturing sector in African LDCs in particular and African countries in general is predominantly foreign controlled, and in most cases a total absence of indigenous entrepreneural participation especially in the major medium and large establishments. Exceptions are in some medium and large establishments owned by the government, but in most cases foreign interests are entrenched in the management and technical and skilled manpower. The dominant foreign interest in the conception and design, ownership and operation of manufacturing enterprises results in, among others, capital intensive structures, largely assembly and preparations, without real manufacturing content. This is largely responsible for the heavy reliance on foreign source for raw materials which are in partly finished intermediate stages in the manufacturing process. The large scale activities in manufacturing and other industries utilize sophisticated technology which can neither be acquired nor adapted to the factor proportions of the African LDCs. The employment generation capacity is considerably low as the foreign interests in industrialization are not aimed at the solution of the burning economic problems of the LDCs. In addition the major commercial and distributive establishments are owned and/or controlled and managed by foreign interests.

12. Co-existing with the foreign medium and large industrial and commercial enterprises are small scale indigenous industrial establishments using rudimentary technology and coversing such areas as artisans and craft industries and semi-skilled marginally employed producers of crude consumer goods. Other activities are categorised under the informal sector which includes self-employed artisans: shoe makers, vehicle repairers etc. They are dominant in terms of employment generation activities. The quality of their products are not standardised, and as such the export potential is limited by quality, supply and demand constraints. As they rely very much on indigenous technology and inputs, they are not very vulnerable to activities in the export sector. 4/

3/ See "The Least Developed Countries: Implementation of the Substantial New Programme of Action," Background Paper (UNIDO, Geneva ID/Conf.5/10, 16 January 1984).

4/ See "The Role of Indigenous small-medium scale enterprises in the Socio-economic Transformation and Development in Africa", E/ECA/PSD.3/33/22 November, 1983.

13. Over the past decade or so, there has been a considerable growth in capital investment in the industrial sector in African LDCs without the corresponding output commensurate with the level of capital stock. Increasing bottlenecks in the industrial sector has engendered the inability of enterprises to apply the capital stock fully, and this has resulted to widespread industrial capacity under-utilization (otherwise referred to as industrial excess capacity) which has been a persistent and malignant component of industrial development of the African LDCs in particular, and developing countries in general. It is manifested as a waste of investment capital, which is left idle unintentionally in an unproductive form due largely to demand and/or supply constraints. It constitutes a burden on the national economy and a waste of scarce capital which results in loss of efficiency and high cost of industrial production. Among others, it undermines the trans-formation and growth objectives of industrial development.

IV. SOME EVIDENCES OF INDUSTRIAL CAPACITY UNDER-UTILIZATION IN AFRICAN LDCS

14. In spite of the enormous threat of industrial excess capacity to the economic development of the African LDCs, very little attention has been given to under-standing the extent and structure, short of very limited enquiry in a few manufacturing enterprises in some countries. If the industrial sector is taken in a wider context to include mining and quarrying; manufacturing; building and construction; electricity, water and gas; and the service workshops in LDCs it is indeed a major proportion of the GDP. However, the focus of this paper is on the manufacturing sector.

15. A global picture of the manufacturing sector in African LDCs shows a remarkable decline, especially since the 1980s. The average real growth rate switched from 2.1 per cent in the 1970s to a decline by 2.8 per cent in 1980-81 and 0.4 per cent in 1981-1982. The preliminary evidence for 1982-84 shows that the manufacturing value added in real terms declined significantly beyond the 1980 level in most African LDCs. The most dramatic decline occurred in Tanzania (-28.3 per cent in 1980-81 and -26.4 per cent in 1981-1982), Togo (-4.2 per cent in 1980-81 and -12.3 per cent in 1981-82), Sao Tome and Principe (-26.7 per cent in 1980-81) and Chad (-20.8 per cent in 1980-81 and -13.0 per cent in 1981-82).

16. Fragmentary evidences indicate that industrial 5/ capacity under-utilization is a universal phenomenon among African LDCs. The problem has become so severe that the utilization rate of manufacturing capacities in African LDCs as a group declined to under 50 per cent by 1980-81. Among countries, the rates vary from 20 to 95 per cent. Within countries, there are sharp variations among industrial categories and enterprises depending on the nature of the dominant constraints. Cases of complete shut downs of manufacturing establishments in the various industrial enterprises are very common features in all the African LDCs.

5/ The emphasis is on the manufacturing sector.

17. The industrial capacity utilization started declining in Tanzania in 1978-80 when it was estimated that the utilization rate in half of the national industrial enterprises was less than 50 per cent. Continued severe economic conditions, especially foreign exchange shortages have caused the rates to decline further to 20 to 25 per cent in the entire national manufacturing capacity by 1982/83. The problem cut across disproportionately in all the industrial categories, but worse in those that depended heavily on foreign sources for raw materials and spare parts 6/. Estimates based on a sample survey of 40 enterprises in Burundi in 1980-81 shows that 42 per cent of them utilized less than 50 per cent of their installed capacity. Of the private enterprises in the sample, 58 per cent utilized less than 50 per cent of their capacity. The corresponding proportions for the public enterprises in the sample was 56 per cent. The utilization rate was zero in some establishments. 7/

18. A survey by the World Bank established that only half of the industries in the sample in Botswana operated at a full capacity 8/. Uganda has been unable to rehabilitate a good proportion of its national manufacturing capacity which has been idle for over a decade. The national industrial utilization rate is estimated at 35 per cent in 1983 9/. In Chad, most of the industrial establishments ravaged by the internal strife are yet to be rehabilitated. Out of the 40 industrial enterprises located in N'Djamena (about half of the national capacity), only 13 of them are in operation at capacity levels ranging from 20 to 30 per cent. Evidence from Guinea shows that the capacity utilization rate of most manufacturing industries was below 40 per cent in 1978 and has been falling ever since 10/. Estimates for Sudan in 1980 put the national industrial utilization rate at 30 per cent. For some specific industries, it was 20 per cent for textiles, 40.5 per cent for sugar and 53 per cent for cement 11/.

6/ See UNIDO, the Potential for Resources-Based Industrial Development in Least Developed Countries No. 3: The United Republic of Tanzania (UNIDO/IS.293, 1982) pp. 47-50; see also Singh, Ajit, "Third World Industrialization: Industrial Strategies and Policies in the 1980s and 1990s," in Industrial Strategies and Policies for Developing Countries, Vol. II (UNIDO/IS.431/Add.1, Dec. 29, 1983) pp. 212-240.

7/ UNIDO - le potential des développement industriel partir des resources naturelles dans les pays les moin avances. No. 2. Burundi, UNIDO/IS.284 - 25 February 1982.

8/ See M. Tiller and B-Decaux, The Manufacturing Sector in Botswana (World Bank, 1980).

9/ Katumba, A.B., "The State of the Industrial Sector in Uganda", (Makerere Institute of Social Research, 20 September 1984), MAFS/011/1/1984.

10/ See Annex IV on page 26 of this paper.

11/ See Idris El Karun, "Industrial Production in Sudan, "In Industrial Strategies and Policies for Developing Countries, Vol. II (UNIDO/IS.431/Add.1, 29 December 1983) pp. 356-372.

19. Other indirect evidences bear testimony to the prevailence of serious industrial excess capacity in African LDCs. Since the 1980s, UNIDO had intensified its programme of rehabilitation of industrial projects in many African LDCs. At the aid co-ordination meetings, a strong case has been made for the inclusion of industrial rehabilitation among others, in the aid package. Recently the DAC countries extended about 8 per cent of their assistance in the form of non-project aid. This package included, among others, rehabilitation of existing installations. The World Bank strongly noted in its programme for sustained development for sub-Saharan African that the greatest emphasis should be placed on the rehabilitation of existing establishments rather than on new projects. 12/

V. THE CAUSES OF INDUSTRIAL CAPACITY UNDER-UTILIZATION AND ITS IMPACT ON INDUSTRIAL DEVELOPMENT

V.1 Causes of capacity under-utilization

20. The incidence of industrial capacity under-utilization finds its root in the dependence of the LDCs upon technologies developed in the advanced industrial countries. These are embodied in the plants and equipments which are produced primarily for the markets of the advanced economies and adapted to their scale of production and factor proportions. The indivisibility of plants constraints the LDCs to choose the scale from the only options available. In addition to the fundamental technological constraint, other causes include demand and supply constraints, planning and execution errors, poor management, government policy measures and the inability of African LDCs to co-operate in industrial planning and harmonization of policies at the sub-regional and regional levels.

21. The demand constraint is imposed by the small size of the market in most African LDCs. The market size is determined primarily by the population size and income level, both of which are very low in most of the countries. As a group, the total population of African LDCs is estimated at 153.7 million in 1982, and the GDP per capita was $297. The estimated 1982 population of 15 of the African LDCs is less than 5 million and that of five of them is less than half a million. As the scale of plant for such small markets may not be available, the LDCs are forced to acquire larger plants. Excess capacity is carried along until demand grows to absorb the surplus or export outlets are found. For sometime now, the competition by the other developing countries and the global economic recession has constrained the export possibilities. The resultant excess capacity caused by drastic fall in internal and external demand has been worsened by supply constraints resulting from severe domestic economic crises and developments in the external sector.

12/ See World Bank, Towards Sustained Development: A Joint Programme of Action for Sub-Saharan Africa, Vol. I of II, Report No. 5228, August 1984.

22. The structural dependence of manufacturing industries on foreign inputs in African LDCs has created a situation in which export trade has become a major determinant of the pace of industrial activities. Most of the countries depend on foreign sources for (i) machinery, equipment, spares and maintenance (ii) managerial and skilled manpower (iii) raw materials and fuel. Capital goods import accounted for 38 per cent of total imports of African LDCs, as a group in 1975-1980 and 30 per cent in the early 1980s. The proportion of imports devoted to machinery (electrical and non-electrical) was 15.4 per cent in 1977-1982 and fuel about 40 per cent. The dependence of some industrial categories on imported raw materials was 100 per cent. Such industries chemicals and drug preparation, plastics, paper products, electrical products and vehicle assemblies. The case of Burundi is typical of other African LDCs 13/. The impact of the shortage of foreign exchange on industrial capacity utilization is apparent from the case of Tanzania in 1981. Only 6 and 5 per cent of the request for foreign exchange allocation for industrial raw materials and spare parts, respectively, were granted.

23. African LDCs have been passing through deepening balance of payments, crises which was triggered off by the oil shock in 1973-1974. The current account deficit built up from $2.2 billion in 1975 to $4.5 billion in 1981. There was a decline to $4.2 billion in 1982 due to a deliberate restrain on imports. The balance of payment crises was complicated by mounting debt problem which rose phenomenally from $1.9 billion in 1970 to $16.1 billion in 1982. The debt service ratio increased from 8.3 per cent in 1970 to 18.7 per cent in 1982.

24. The balance of payment and debt crises, and severe domestic economic situation affected the development and maintenance of the critical social and economic infrastructure very adversely. This resulted in bottlenecks in production and movement of domestic raw materials and break-down of transport and communication network. The case of the land locked African LDCs 14/ was compounded by the addition of the problems of their transit neighbours.

25. Planning error and operational constraints are very common causes of industrial excess capacity in African LDCs. Planning error has resulted in choice of technique and scale unrelated to domestic factor proportions, market, manpower and other resource base. This situation was very common during the period of favourable export earning and easier access to external assistance which resulted in a rush to

---

13/ See UNIDO/IS.289, 23 February 1982, Le Potentiel de Développement Industriel a partir des resources naturelles dans les pays le moins avances. No. 2, p. 32.

14/ The land locked African LDCs are Botswana, Burundi, Central African Republic, Chad, Lesotho, Malawi, Mali, Niger, Rwanda, Uganda and Burkina Faso.

establish industries without proper project design and evaluation. Even where feasibility studies were carried out, foreign interests are more concerned with sale of equipments (in many cases, obsolete). Bilateral and other official assistance, and their technical support did not do much either especially with the component of their aid tied to equipment procurement.

25. At the operational level, adequate provision has not been made for operating capital to bridge the period between the inception of the project and when it starts making profits. Serious operational problems have arisen from poor management, lack of skilled operational staff and heavy reliance on expatriate manpower. Especially in government projects, the management staff may be appointed with purely political consideration, and little regard for background and experience. Even where they have the necessary background, the incentive structure (salaries, and wages) are so poor relative to the private sector options, that they destroy initiatives. In addition, interference by government creates uncertainity and precludes innovative drives which could lead to the full utilization of installed capacity.

27. Some government policies have contributed to the building up of excess industrial capacity. The high tariff protection to manufacturing enterprises, especially the relatively large ones with government and foreign interests have created monopolistic and oligopolistic structures. Other investment incentives include easy access to cheap capital at low interest rate, favourable exchange rate facilities, accelarated depreciation of capital, tax holidays, writing off losses against future profits and high government subsidies. These policies and incentives have encouraged the adoption of high cost technology, suboptimal scales of production, as they make it possible for enterprises to recoup the high cost of idle capacity by maintenance of high price levels for their products.

28. The case of Burundi is typical of all the African LDCs. Out of 71 enterprises surveyed, half of that operate as monpolies and 14 per cent are sustained by subsidies from the government and other sources. It has to be noted that in all African LDCs, excess industrial capacity is more associated with the relatively large projects.

V.2 The impact of industrial capacity under-utilization on industrial development

29. It has been recognized that the industrial sector has a strategic role in the structural transformation of the LDCs to achieve a self-sustaining growth of the economy, as it has the potential to cope with the emerging development problems especially rising unemployment, falling productivity and output. It is necessary to husband industrial capital and allocate it in such a manner as to promote growth. Industrial capacity underutilization endangers the very process of industrialization and hinders the prospects for faster economic growth by reducing economic efficiency and employment of domestic resources in the production process. It ties up a proportion of scarce national investment capital in idle capacity, causes a fall in profit (hence loss of investment), wastes scarce foreign exchange, and deprives the economy of the output of goods and services. It acts as a disincentive for innovative drives and investment in Research and Development (R & D), and discourages further investment by domestic initiatives and/or external capital flows.

30. The building up of idle industrial capacity prolongs the life time of installed capacity, thereby hindering the renewal of obsolete equipment and the introduction of more advanced production methods which is embodied in the new equipments. The case of Uganda is illustrative. The machinery in the major textile mill, cement and sugar factories are about 40 years, and that of the pepsi cola plant is about 34 years old.

31. The technical progress in new plants is closely associated with improvement in the pace of production and the quality of the products which enhances competition with imports. Industrial excess capacity perpetuates the technical lag of the African LDCs, thus widening the gap in the technological progress between them and the advanced economies. It precludes the LDCs from exposure to new techniques which can be adapted or form the basis for the development of their own technology that is relevant to their resource base and factor proportions.

32. Suboptimal capacity utilization reduces government revenue in the form of sales, excise and export taxes. Such taxes constitute a significant proportion of government revenue. It has been estimated that if all industries were operating at normal capacity level of utilization in Tanzania instead of the present low level, sales and excise tax revenue would be doubled, which would not only eliminate the current fiscal deficit, but will also make a sizeable contribution to the capital account 15/.

VI. STRATEGIES TO COPE WITH INDUSTRIAL CAPACITY UNDER UTILIZATION

33. The fragmentary evidence on industrial capacity under utilization suggests that industrialization is becoming a main source of economic difficulties in African LDCs if the current trend continues. Attempts to deal with the problem will require a thorough understanding of the location, structures, extent and causes, as the basic tools for effective economic policy and investment decision. This can be facilitated by the organization of the relevant systematic statistics especially at the enterprise and industry levels. It appears that the fundamental problem in the industrial development of the African LDCs is largely the lack of the necessary government strategies, policy, and effective measures in the industrial enterprises which contribute to the existence of capacity underutilization. Another dimension of the problem is the special circumstances of some of the African LDCs, like small size and land lockedness, which suggests a sub-regional and regional approach to industrial planning and implementation. Measures to deal with the problem of Industrial Excess Capacity can be classified into short-, medium-, and long-term, which can be implemented at the national, sub-regional and regional levels.

15/ See JASPA/ILO, Tanzania: Basic Needs in Danger (Addis Ababa, 1982).

VI.1 Short-term Measures at the National Level

34. Some changes in government fiscal and monetary policies are required to reduce industrial excess capacity. Among them are high tariff rates which encourage monopolistic structure by ensuring adequate profit for the enterprises that keep excess capacity through charging high prices for their products. Investment incentives like tax holiday, accelerated depreciation of capital and pioneer status, ought to be reviewed, and where need be, tied with performance. The domestic credit conditions and allocation of foreign exchange for the importation of capital equipment, spare parts and raw materials should reflect the existing market conditions.

35. The factor of foreign exchange in industrial excess capacity is a major problem in African LDCs. A deliberate and determined effort should be made to plan foreign exchange expenditure on imports to give top priority for the maintenance of the operations of the existing enterprises in order to minimize idle capacities. Such expenditures will focus on spare parts and raw materials.

36. The importation of goods which are produced in adequate quantity locally is one of the sources of industrial excess capacity. An example is in the textiles industry where a good number of African LDCs have adequate domestic productive capacity. In such cases, there is a need for tight control on imports, but the necessary measures must be taken to prevent the development of monopolistic and oligopolistic structures. This can be achieved by monitoring the output and price levels of the local enterprises to make sure that they are reasonable within the constraints of the domestic environment.

37. Some government policies particularly those that affect factor prices have some negative effect on industrial capacity utilization. A good example is the minimum wage legislation which sets wages above the actual market price of labour and in most cases the policy has little or no relation with productivity. This type of policy discourages employment of the optimal level of labour and use of equipment for longer hours, particularly where more than one shift is necessary. The cost of labour involved does not justify the level of output realized, consequently the enterprises may prefer to leave the plants idle for some periods. A contrast to this is the situation that prevails in government enterprises where the management and operational staff are subjected to the salary structure in the civil service. This destroys the initiative of the staff in the industrial enterprises for devising ways of reducing excess capacity in their respective establishments. The demoralization is the more serious as their counterparts performing similar functions in the private sector are given more incentives. This problem is compounded by the fact that, in most cases, there are interferences from the supervisory ministries from where directive and/or clearance is given by officials who have no knowledge whatsoever of industrial operations. A positive step should be taken by the government in this regard by removing government industrial enterprises from the burden of civil service bureaucracy and insulating them from interferences especially in matters relating to fixing of wages, organization, employment and operations in a manner commensurate with their business orientation.

38. Certain internal measures can be taken within the industrial enterprise to increase the operational and organizational efficiency. Among them are the introduction of modern methods of planning and programming investment and output to ensure minimum idle capacity and stock of raw materials and output. This will also facilitate adequate provision for operating capital. Better organization of activities and responsibilities will increase labour productivity and act as a motivational factor for employees.

39. The adoption of proper quality control and production technique will ensure that the products are competitive in both the domestic and external markets, and open export possibilities, thereby removing demand constraints. Productivity and quality of production can be further enhanced by the engagement of capable managerial and operational staff and instituting measures for skill improvement and upgrading in order to acquaint staff with new techniques of production and control, and managerial styles. The necessary steps should be taken from time to time to relate incentives and remuneration to productivity and performance. Where supply and demand constraints permit, industrial enterprises should introduce multi-shift work, especially in capital intensive operations. This will result in cost reduction, higher efficiency, increased gross output and better utilization of capital stock.

VI.2. Medium-term-term Measures

VI.2.1. At National Level

40. There is a need for government to set up broad policy guidelines to regulate and monitor foreign investments to ensure that they utilize their installed capacity to the maximum extent possible. Foreign enterprises in most cases seek the most profitable outlets for their resources rather than the interest of the host nation. Corresponding to this, it is necessary for the government to have a policy on the age and quality of equipment imported into the country by foreign enterprises. Many of the equipments installed in some of the LDCs are so old that they cannot operate at the rated capacity due to obsolence as they break down more often and their spare parts cannot be found easily.

41. There is a need for a systematic programme to minimize the dependence on foreign sources for raw materials, spare parts, maintenance and skilled manpower. The government should be selective in the licensing of industrial enterprises by ensuring that they have the potential, within a reasonable period of time (under 5 years), to rely on local sources for the whole or the maximum possible proportion of their raw material needs. The inability and unwillingness of enterprises to invest in the production of raw materials and some capital equipments locally result largely from inadequate protection for the domestic production. Potential investors will be required to present a detailed proposal on how they intend to meet their input requirement, with projection into the future. A group of enterprises within the same industry may be required to set up facilities for the production of raw materials and spare parts. Such facilities can be financed with compulsory tax deductible contributions from the various enterprises.

42. The government can set up a Centre for skills development which can be financed with a proportion of the profit of manufacturing enterprises and a matching grant from the government. The problem in skill transfer by expatriate manpower has proved very elusive because of the reluctance of foreign enterprises to take definite measures in this direction. Expatriate staff should have a local counterpart to acquire their skill within a reasonable time and this process should be monitored by the skills Centre. Technical assistance in the area of industry should be utilized in skill development institutions which should be on-the-job in orientation.

43. Industrial capacity under utilization sometimes results because of inadequate domestic demand. Production for export may be constrained by the poor quality of the products and high cost of production due to, among others, obsolete equipment, small scale of plants resulting in diseconomies in production and lack of market information. Government can devise national standards on plant specifications, product standard, and quality control which will enhance the competitiveness of domestic products in the world market. The government can also set up "standard" bureau to monitor the quality of products; and an external market research bureau, to provide market information for export as well as incentives to export oriented industries.

44. Industrial enterprises, especially private sector establishments, should take measures to increase industrial capacity utilization through maximum diversification possible in the product and process structure as a safe-guard against short falls in demand and inputs (especially raw materials). Diversification along product lines will make it possible for them to switch from the production of one commodity to the other, while along process line will facilitate the substitution of, for example, an imported raw material with local one. The later may require some minor adaptation of the plant and equipment. The feasibility of this, however, depends on technological factors.

45. It is also possible for enterprises to engage in positive joint ventures that minimize idle capacity by sharing certain aspects of their product lines and market development and information. Maintenance workshop can be operated jointly by a group of enterprises, and an enterprise can subcontract orders it cannot meet to another enterprise rather than investing in a new facility that will be idle most of the time. Such cooperative arrangements will guard against the existence of two many small plants which experience diseconomies of scale.

VI.2.2. At the Sub-regional and regional levels

46. Manpower constraints could be more easily handled under subregional and regional arrangements. Shortages are usually localized in certain countries and in specific occupations. Experience in some African LDCs indicate that shortages in some occupations may co-exist with surpluses in others. This suggest that the shortage of skills may be more acute at the country level than at the regional level. It is easier to carry out manpower development for specific skills at the subregional and regional levels. Specialized institutions can be located in the different countries to serve the needs of all the countries in the subregion.

47. Industrial excess capacity in African LDCs can be minimised by exploring further export possibilities at the subregional and regional levels and in the markets of advanced countries. This would require a substantial effort on market information and improvement and standardization in the quality of their products to enhance their competitiveness. A few African LDCs have been able to make successful in-roads into the markets of the advanced countries but this has been constrained recently by competition by other developing countries, protective measures in the advanced countries and the global economic recession. Subregional and regional trade in manufactured goods provides a cushion against the uncertainties in the market of the advanced countries. Efforts should be made to work out the framework for the measures for the necessary harmonization to sustain both the production and the trade.

VI.3. Long-term measures

VI.3.1. At the national level

48. Industrial capacity under utilization often results from poor national strategies, planning, implementation and monitoring. Industrial strategy in the overall national economic planning and programming, needs to take due consideration of the domestic resource base with regard to the following aspects of the economy: raw material availability, linkages with the other sectors, domestic market demand,

export facilities, transport and communication infrastructure, power and other public utilities, managerial and skilled manpower availability. These factors will determine technique and scale of plant that can be sustained without undue stress to the economy's capacity. Proper industrial programming will ensure coordination and monitoring at the national level in the approval and issuance of licences and control of the number and types of industries to be established. This is necessary so that the domestic resources, export potentials and external resource flows can support the level of industrialization.

VI.3.2 At the subregional and regional levels

49. Most African LDCs are small countries characterized by low income, low population, narrow domestic resource base and poor export prospects. As individual countries, most of them cannot embark on any meaningful industrialization. In addition to low level of social and economic infrastructural development, there is acute manpower shortage, especially at the managerial and skilled levels. Their economic situation constrain them to choose smallsized plants in their limited industrial development efforts because of high degree of uncertainity, lack of the organization and technical capacity to handle large plants, low capacity for resource (domestic and external) mobilization and limited domestic market. African LDCs and other African countries can get around these problems by planning and implementing their industrial development through co-operation at the regional and subregional levels. A subregional and/or regional approach will remove the market bottleneck and facilitate the choice of larger plants for the wider market. The choice of larger plants will increase the competitiveness of the products with imports, as well as open up export options.

50. Subregional and/or regional approach to industrialization opens up the prospects for the removal of supply bottlenecks and specialization at the various stages of the production process. It is possible for countries to specialize in certain aspects of the production process, particularly in heavy industries. For example, in iron and steel project, the ore can be mined and processed in one country and then shipped to another country within a subregion for further processing into billets which can be converted into bars, rods and sheets in third country and then marketed in the regional market. In petrochemical complex, the crude petroleum produced one country can be refined in another and the bye-products can be shipped to a third country for further processing into other petrochemical products which will constitute inputs into various industries in the different countries in the region. The surpluses of the products at the various stages of production can be exported. There is, however, a need to ensure that the various industries in the various complexes (primary - secondary-tertiary) are equitably distributed among the various countries. To a large extent, activities at the subregional and regional levels will considerably reduce the raw material bottleneck and foreign exchange difficulties as industries will be planned and programmed with due consideration for the regional resource endowment (human and material).

51. The development of economic infrastructure like roads and communication can be more meaningfully carried out at the subregional and regional levels. Substantial economies of scale can be gained by developing power facilities and carrying out research in major areas like agriculture, industry and natural resources for a group of countries. This approach is more pertinent to the needs of land-locked countries.

52. The dependence of African LDCs on foreign technology is one of the other crucial factors that result in excess capacity in industries. African LDCs, in co-operation with other African countries should aim at strengthening the African Regional Centre for Science and Technology in order for the Institution to play a more active role in the development and adaptation of technology.

53. There is no doubt that a lot of scope exists for dealing with the problem of industrial capacity under utilization among African LDCs more decisively at the sub-regional and regional levels. It is necessary to set up the political and economic framework for discussion and implementation of the necessary programmes. This is the more so as their problems are similar which creates the necessity for them to start a dialogue among themselves on working out the sort of co-operation that will re-inforce the measures for attaining their development objectives in the 1980s.

VI.4. The Implementation of Industrial Development Decade for Africa (IDDA)

54. The African LDCs should implement the provisions of the Industrial Development Decade for Africa (IDDA) which was borne out of a realization of the need to bring about a major change in the socio-economic development of Africa and the critical role of industry in that process of change.16/ This will contribute immensely to the solution of the problem of industrial capacity under utilization and consequently setting the pace for sustained industrial development. Actions are to be taken at the national, subregional, regional, interregional and international levels. The implementation phase has been set for the period 1985-1989.

55. At the national level, countries are expected to prepare an investment portfolio of identified core projects. They are also required to identify projects requiring co-operation at the subregional and regional levels with a view of reaching speedy decisions on intra-African co-operation. Among others, equal attention would be given to physical infrastructure, institutional mechanisms, environmental considerations, technology and, above all, the manpower requirement for the implementation of the industrial programmes and plans. Actions are to be taken in the areas of science and technology, energy, the development of industrial technological manpower, especially at the various skills and management levels required for planning, implementing and operating the industrial projects. A technology programme would include research and development, standardization and quality control, engineering design and technology adaptation, and the strengthening of negotiating capacities for the acquisition of technology.

16/ See United Nations, A Programme for the Industrial Development Decade for Africa (New York, 1982).

56. A detailed assessment of the financial requirements should be undertaken as well as appropriate measures should be adopted by the countries for the mobilization of domestic and external resources for the implementation of the programme. The African Development Bank (ADB) should devote a certain proportion of its resources to financing the IDDA programme. A substantial increase in the flow of external financial resources for industrial investment, especially in the African LDCs, is of crucial importance in the attainment of the objectives of the programme.

57. The actions at the subregional and regional levels include the preparation of industrial policies and programmes within the strategic industrial subsectors and areas at the subregional and regional levels to promote industrial complementarity based on specific resource endowment of each African country as well as joint and/or cross participation to optimise limited investment resources and to enlarge the market. Other areas of co-operation are in information system to exchange industrial and technological information, identification of multinational projects, industrial training, energy, engineering consultancy, trade in manufactures, industrial inputs and raw materials, the harmonization of fiscal and trade policies and the co-ordination of national industrial development plans.

58. The Decade programme recognizes that one of the fundamental requirements of the Lagos Plan of Action for achieving the industrial development in Africa is the creation of a network of small and medium scale industries, as well as promoting and encouraging the informal sector.17/ Small and medium scale industries develop substantial linkages with the dominant primary sectors of the economy and provide the basis for supply of raw materials from primary domestic resource base especially agriculture, to the large scale establishments. They in addition increase the local production of basic goods and services particularly those based on domestic natural resources. The small and medium enterprises can be adapted or developed to manufacture spare parts and service materials for the large scale establishments, thus serving the dual role of saving foreign exchange and reducing the delays associated with foreign sources of inputs.

VII. Conclusions

59. Industrial capacity under utilization has become a major problem that is increasingly crippling the industrial development and attempts for self-sustaining growth of the African LDCs. The fundamental sources include inappropriate government strategies, poor policies and lack of planning which results in the establishment of enterprises that are unrelated to the domestic resources base and factor proportions. The entrenched foreign interests in the design, choice of techniques and operation of industrial enterprises is aimed at finding the most profitable outlet for their surplus resources which at times are in the form of equipments, and plants (at times obsolete) which rely largely on foreign inputs and enjoy monopolistic shelters without any reasonable contribution to the primary national objectives in the industrial sector.

60. There is an urgent need to cope with the existing industrial capacity and more fundamentally to ensure that future establishments do not have the potentials to develop idle capacities. This would require effective government policies, planning and monitoring capabilities that will give the necessary directives to

---

17/ Ibid.

both foreign and indigenous enterprises. Industrial planning and programming should be increasingly more inward oriented and should progressively develop strong linkages with the critical sectors of the domestic economy to minimize the external supply bottlenecks. African LDCs should plan some aspects of their industrial development at the regional and subregional levels either among themselves and/or with other African countries. The necessary co-operation in joint ventures and harmonization of policies will address themselves effectively to some of the fundamental causes of industrial excess capacity. It is necessary, at the national level, to develop the machinery for the organization and collection of reliable and systematic data on the current status of industrial capacity under utilization and a good insight into the causes for meaningful and effective planning and implementation of industrial development. In spite of the conceptual problems in the study of capacity utilization, every attempt, however vague, must be made to estimate and monitor the degree as it provides the basic tools for better policy in the industrial sector and investment decision.

Population, per capita GDP and growth rates, GDP in manufacturing of African least developed countries, 1980-1982

	Population (million 1982	Per capita GDP ($) 1982	Average annual growth rate of per capita real product (percentage) 1980-1981	1981-1982	GDP in % share in total GDP 1982	Manufacturing real growth rates (%) 1980-1981	1981-1982
Benin	3.62	288	3.3	4.4	5	3.4	6.7
Botswana[a]	0.96	830	8.7	-1.5	9	26.4	6.7
Burundi	4.46	249	-1.2	-5.1	9[i]	2.2	-0.3
Cape Verde	0.33	257[a]	6.8	3.4	6[i]	6.7	2.1
Central Afr. Republic	2.40	269	-4.3	-3.9	6	2.1	1.6
Chad	4.64	148	-10.9	-9.2	7	-20.8	-13.0
Comoros	0.38	261[b]	0.6	2.9	5	6.5	4.9
Djibouti	0.33	642[b]	-1.2	-1.2	8	-1.1	-4.7
Equatorial Guinea	0.38	188[c]	-0.2	1.5	5[i]	1.7	5.0
Ethiopia	32.76	137	-1.3	0.5	10	4.1	3.4
Gambia [d]	0.63	357	-5.7	7.2	5	92.3	15.1
Guinea	5.28	387	-0.5	2.9	3	3.0	8.0
Guinea Bissau	0.82	198	1.3	-1.4	1	2.0	-5.7
Lesotho [e]	1.41	240	1.0	-0.3	4	2.4	3.0
Malawi	6.27	213	-3.4	0.1	10	1.8	-4.5
Mali	7.34	157	-4.2	-4.2	7	-3.6	-4.3
Niger	5.84	340	-1.8	-3.0	5	-4.4	-0.8
Rwanda	5.59	248	-0.8	-2.4	14	1.8	15.1
Sao Tome and Principe [f]	0.09	335[g]	-12.5	...	...	-28.7	...
Sierra Leone	3.67	348	3.3	-2.9	4	3.9	1.9
Somalia	5.12	293	-4.1	1.4	6	-0.9	8.6
Sudan	19.45	470	3.4	1.7	6	4.4	3.3
Togo	2.79	295	-7.9	-6.3	4[i]	-4.2	-12.3
Uganda	14.06	212[h]	0.9	2.6	4[i]	-5.9	12.1
Tanzania	19.11	261	-7.5	-5.9	7	-28.3	-25.4
Burkina Faso	6.36	185	6.9	5.0	11	4.0	2.9
African LDCs	153.7 [k]	297[k]	-1.0	-0.6	7	-2.8	-0.4

Source: UNCTAD Secretariat calculations based on data from UN Statistical office, the Economic Commission for Africa, the World Bank and other International and national sources.

a/1980. b/ Excluding income accruing to national residents. c/1981 d/ Fiscal year beginning 8 July. e/Fiscal year beginning April 1. f/Fiscal year beginning 1 July. g/1981. h/Per capita GNP 1981. i/1980. j/1981. k/ECA.

Proportion of manufactured goods in exports and imports of African LDCs, 1970-1981
(percentages)

	E X P O R T S			I M P O R T S		
	1970-74	1975-79	1980-1981	1970-1974	1975-79	1980-81
Benin	10.1	9.9	...	68.5	63.9	...
Burkina Faso	5.7	8.6	11.9	57.0	60.0	56.5
Burundi	1.4	1.2	1.3	55.5	63.2	...
Cape Verde	9.5	19.1	5.2	29.5	28.7	43.3
Central Afr. Republic	33.0	30.9	26.2	76.9	78.1	73.1
Chad	2.9	5.1	...	53.8	65.6	...
Comoros	37.8	29.5	...	53.8	55.6	...
Djibouti	3.5	2.9	...	45.8	40.0	...
Equatorial Guinea	...	0.8	...	...	...	...
Ethiopia	1.9	0.9	0.4[a/]	73.2	68.7	60.0[a/]
Gambia	0.03	0.2	...	63.0	60.1	...
Guinea Bissau	2.3	0.5	...	58.1	55.0	...
Malawi	3.2	3.7	6.9	67.9	70.4	67.7
Mali	9.8	8.1	...	58.0	61.4	...
Niger	6.7	3.3	2.0	62.8	58.6	53.6
Rwanda	2.0	0.1	...	61.3	62.5	...
Sierra Leone	61.9	58.7	...	60.6	45.7	...
Somalia	2.0	1.5	0.5	59.5	62.8	58.8
Sudan	6.5	12.9	12.3	62.1	72.8	55.1
Togo	5.3	7.1	12.4	66.3	67.7	59.1
Uganda	0.2	0.2	...	80.2	70.8	...
United Rep. of Tanzania	11.3	12.9	12.3	65.2	67.4	58.7

Source: Handbook of International Trade and Development Statistics 1979, 1980 and 1984 supplement.

... not available.

a/ 1980-1982.

Labour productivity in some African LDCs (modern manufacturing sector) (gross value added at 1970 constant factor cost per man-year)

(US dollars)

						Annual	Annual growth rate percentage		
	1970	1975	1978	1979	1980	1970-1980	1970-1980	1975-1980	1978-1980
Ethiopia	1973	2004	1878	2271	2493	2073	2.5	4.8	15.3
Malawi	1272	1304	1016	1119	1015	1206	-3.4	-4.7	0.0
Central African Republic	1403	2230	1986	1895	1741	1935	3.9	-4.3	-6.8
Somalia	2415	1947	1652	1534	1519	1991	-4.1	-7.6	-4.4

Source: Productivity and development of manufacturing industries in April (E/ECA/ISD.3/34).

Capacity utilization of industrial enterprises in Guinea, 1976-1978

(percentages)

Enterprise	(percentages) Capacity utilization		
	1976	1977	1978
Agricultural equipment at Mamou (USUA)	29	32	16
Brick industry at Kankan	38	44	19
Brick industry at Kobaya	-	53	..
Candle factory (SOFAB)	14	31	20
Food preservation at Mamou	31	37	9
National enterprise for tobacco and matches (EMTA)	121	116	..
National electricity (SME)	90	123	100
Fruit joice canning (UJFK)	11	14	..
Furniture at sunfonia (UMS)[a/]	10	13	12
Vegetable oil factory at Sabola			
- vegetable oil	14	35	35
- cake	17	39	..
- soap	14	50	..
Paint industry in (UNAKRY (SIPECO)	60	75	23
Wood work and saw milling (USCZ)	25	20	..
Metal fabrication (SOMGUIFAB)			
- roofing materials	55	58	42
- Utensils	96	104	160
Soap and perfume (IGAT)	25	45	40
Beverages at foulaya (CBF)	15	26	26
Sugar at Koba (SUCOBA)[b/]	27	20	7
Tea industry at the de Macenta (UTM)	31	20	..
Textile complex at Sanoyah a/	2	4	..
National tiles and granite (SOMACAG)			
- tiles	31	16	-
- granite	10	60	-
Guinee tyre retreading	32	35	35
Water distribution	58	63	44

a/ In the course of renovation.

b/ Plantation in the course of rehabilitation.

Source: United Nations: Conference des nations sur les pays les moins avances: réunion des consultation par pays (memoires de la Guinee, 1981).

Installed capacity utilization in principal industrial activities in Burundi in 1979/1980

Industry	Capacity utilization (percentages)	Industry	Capacity utilization
AGRO-INDUSTRY		METAL FABRICATION	
Coffee processing	28	Structural works	75
Tea processing	51	Galvanised sheets	15
Rice milling	84	Aluminium utensils	0
Cotton gining	14	Nails and bolts	29
Flour milling	0	NONE METALLIC MINERAL PRODUCTS	
Cigarettes	93	Cement	33
Abattoir	16	Burnt Bricks	0
		Terrazo	6
FOOD INDUSTRY		Carrelage	47
Cotton seed oil milling	23	CHEMICAL INDUSTRIES	
Beer	70	Oxygen	33
Soft drinks	-	Acetylene	3
Milk	33	Soap	47
Ice and ice cream	98	Paints and vanish	20
Fish preservation	8	Insecticides	63
Tomatoe puree	39	Medical preparation	70
TEXTILE INDUSTRY		Mattress	25
Spinning and weaving	14	Matches	80
Upholstery	62		
Tailoring	25	ELECTRICAL FITTINGS	60
PLASTIC PRODUCTS			
Shoes	67		
Bags	27		

Source: UNIDO: Le Potentiel de développement Industriel A partir des ressources naturelles dans les pays les moins avances No.2: Burundi UNIDO/IS.289, 23 February 1982, P.30.

Proportion of imported content of industrial inputs in Burundi, 1981

(percentage)

Industry	Imported raw material	Industry	Imported raw material
AGRO INDUSTRY		METAL FABRICATION	
Coffee processing	0	Structural works	100
Tea processing	0	Galvanised sheets	100
Rice milling	0	Aluminium utensils	100
Cotton gining	0	Nails and bolts	100
Abattoir	0	NON METALLIC MINERAL PRODUCTS	
Flour milling	60	Burnt bricks	0
Cigarettes	100	Cement	36
FOOD INDUSTRY		Terrazo	100
Cottor seed oil milling	0	Carrelage	80
Ice making	0	CHEMICAL INDUSTRY	
Fish preservation	0	Oxygen	100
Tomatoe puree	0	Acetylene	100
Milk	6	Mattress	100
Beer	100	Paint and vanish	100
Soft drinks	100	Medical preparations	100
TEXTILE INDUSTRY		Soap	50
Spinning and weaving	0	Insecticides	2
Upholstry	100	Electrical products	100
Tailoring	100	Vehicle repairs	100
PLASTIC PRODUCTS		WOOD AND PAPER INDUSTRY	
Plastic shoes	100	Printing	100
Plastic bags	100	Wood work	80

Source: UNIDO Le potentiel de Devéloppement industriel a partir des ressources naturelles dans les pays les moins avances No.2: Burundi UNIDO/IS.289, 23 February 1982.

Installed capacity utilization in parastatal manufacturing enterprises in United Republic of Tanzania, 1979 and 1980

Industry	Capacity utilization (percentages)		Industry	Capacity utilization	
				1979	1980
Sugar processing	58.2[a/]	58.5[a/]	Fertilizer	36.0	34.0
Cashew processing	85.0[a/]	53.0[a/]	Pyrethrum extract	18.0	27.0
Other food processing	45-70[a/]	30-65[a/]	Petroleum refining	82.3	82.1
Beer	89.7	76.2	Tyres	52.0	53.0
Tobacco	56.0	69.5	Plastic product	36.0	22.0
Textile	55.6	49.4	Cement	50.0	48.0
Leather	53.0	49.0	Aluminium	51.0	39.7
Footwear	66.0	62.0	Metal fabrication	23-50	15-49
Wood products	38.0	38.0	Motor vehicles	25.0	

Source. UNIDO: The potential for resources - based industrial development in the least developed countries No.3: United Republic of Tanzania (UNIDO/IS.293, 10 February 1982) p.49.

a/ Figures are for financial year July-June.

Main access to the sea for land-locked African LDCs

Country	Originating point	TRANSIT PORT	TRANSIT COUNTRY	DISTANCE in KMS	Means
Botswana	Gaborone	Cape Town	South Africa	1 400	Rail
	Gaborone	Maputo (via South Africa)	Mozambique	1 100	Rail
Burkina Faso	Ouagadougou	Abidjan	Ivory Coast	1 210	Road
	Ouagadougou	Abidjan	Ivory Coast	1 150	Rail
	Ouagadougou	Lome	Togo	1 000	Road
	Ouagadougou	Tema	Ghana	900	Road
	Gaborone	Port Elizabeth	South Africa	1 200	Rail
	Gaborone	Durban	South Africa	1 100	Rail
Burundi	Bujumbura	Dar es Salaam	Tanzania	1 455	Rail & water
	Bujumbura	Mombasa	Kenya	1 850	Road & water
Central African Rep.	Bangui	Pointe-Noire	Congo	1 815	Rail & water
	Bangui	Duala	Cameroon	1 400	Road & rail
Chad	N'Djamena	Lagos	Nigeria	2 000	Rail & road
	Moundou	Port Harcourt	Nigeria	1 750	Water & road
	N'Djamena	Douala	Cameroon	2 000	Rail & road
	Sarh	Douala	Cameroon	2 015	Rail & road
Lesotho	Maseru	Durban	South Africa	740	Rail
	Maseru	East London	South Africa	800	Rail
Malawi	Blantyre	Beira	Mozambique	560	Rail
	Blantyre	Nacala	Mozambique	700	Rail
Mali	Bamako	Dakar	Senegal		
	Bamako	Abidjan	Ivory Coast	1 289	Rail & road
	Bamako	Abidjan	Ivory Coast thru. Burkina Faso	1 250 1 170	Rail & road Road & rail
Niger	Niamey	Cotonou	Benin	1 060	Road & rail
	Zinder	Abidjan	Ivory Coast	2 690	Road
	Niamey	Abidjan	Ivory Coast	1 690	Road & rail
	Zinder	Cotonou	Benin	1 700	Road & rail
	Niamey	Lone	Togo	1 225	Road
	Zinder	Lome	Togo	225	Road
Rwanda	Kigali	Dar es Salaam	Tanzania	1 750	Road, water rail
	Kigali	Mombasa	Kenya	1 790	Road & rail
Uganda	Kampala	Mombasa	Kenya	1 450	Rail & road

Source: A transport strategy for land-locked developing countries: Report of the Expert Group on the Transport Infrastructure for Land-locked Developing Countries (TD/B/453/Add.1/Rev.1). United Nations Publication, Sales No.E.74.II.D5.